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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,671	12/28/2005	Magnus Bengtsson	P17807-US2	1680
27045	7590	11/12/2008		
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR 1-C-11 PLANO, TX 75024			EXAMINER MALEK, LEILA	
			ART UNIT	PAPER NUMBER
			2611	
			MAIL DATE	DELIVERY MODE
			11/12/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,671	Applicant(s) BENGTTSSON ET AL.	
	Examiner LEILA MALEK	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/18/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed PCT application is acknowledged.
2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/542,671, filed on 07/18/2005.

Information Disclosure Statement

3. The information disclosure statements submitted on 07/18/2005, has been considered and made of record by the Examiner.

Drawings

4. Figure 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claims 6-9 and 15-21 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim (for example claim 6), depends on another

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multiple dependent claim (claim 5). See MPEP § 608.01(n). Accordingly, the claims 6-9 and 15-21 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 3 and 12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. As to claims 3 and 12, Applicant in invention's disclosure fails to disclose how level adjustment has been provided by measuring the level of the saturated data symbols. According to claims 1 and 10, the level adjustment has been performed by using the despread data symbols and not by using the truncated and saturated data symbols. Therefore, the claimed subject matter has not been disclosed in a way to enable one skilled in the art to use the same method.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim 20 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Because claim 20 is directed to a computer program and computer programs are not statutory subject matters.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 4, 5, 10, 11, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's background of invention, in view of Easton (US 5,764,687).

As to claims 1 and 10, Applicant in the background of invention discloses a method/apparatus for receiving radio signals in a receiver for a digital wireless communications system (see pages 2, 3, and 4), the method comprising the steps of: level adjusting a received radio signal by an automatic gain control (see page 3, line 5 – line 33); and despreading the level adjusted signal in a RAKE unit having a number of fingers (see the description of Fig. 3, on page 10, lines 23 – page 4, line 5), thus providing a number of despread data symbols, each despread data symbol being represented by a first number of bits (see page 11, line 5), and level adjusting the despread data symbols provided from the RAKE unit in dependence of the despread data symbols (see page 11, lines 14-17). Applicant in the background of invention discloses all the subject matters claimed in claims 1 and 10, except that the method further comprises the steps of truncating the despread data symbols provided from the RAKE unit to obtain truncated data symbols represented by a second number of bits, the second number being smaller than the first number, wherein the second number of

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bits are selected as the least significant bits of the first number of bits representing a despread data symbol; saturating the truncated data symbols to obtain saturated data symbols by replacing a truncated data symbol with the highest value that can be represented by the second number of bits, if the value of the despread data symbol from which that truncated data symbol was obtained is larger than the highest value, and replacing a truncated data symbol with the lowest value that can be represented by the second number of bits, if the value of the despread data symbol from which that truncated data symbol was obtained is less than the lowest value; so that overflow for the truncated data symbols is prevented. Easton, in the same field of invention, discloses a rake receiver apparatus comprising: a plurality of finger front ends (see Fig. 6), wherein the outputs of the fingers have been truncated (see block 338) to obtain truncated data symbols represented by a second number of bits (see column 17, lines 29-32), wherein the second number being inherently smaller than a first number (the first number is the total number of bits before truncation), wherein the second number of bits are selected as the most significant bits of the first number of bits representing a despread data symbol and saturating the truncated data symbols to obtain saturated data symbols (see column 17, lines 34-37). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Applicant's background of invention as suggested by Easton to reduce the number of bits and as the result prevent overflowing of the decoder (see column 17, lines 35-37). Applicant's background of invention and Easton disclose all the subject matters claimed in claims 1 and 10, except that the non-truncated bits are selected as the least significant bits of the first number of

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bits representing a despread data symbol. They also fail to disclose that saturation has been performed by replacing a truncated data symbol with the highest value that can be represented by the second number of bits, if the value of the despread data symbol from which that truncated data symbol was obtained is larger than said highest value, and replacing a truncated data symbol with the lowest value that can be represented by the second number of bits, if the value of the despread data symbol from which that truncated data symbol was obtained is less than said lowest value; so that overflow for the truncated data symbols is prevented. As to the first limitation, the whole purpose of truncation is to reduce the number of bits, and since it is not disclosed in specification why the most significant bits have been truncated instead of the least significant bits, examiner states that choosing the most significant bits or the least significant bits for truncation is a matter of design choice based on the system requirements and therefore it would have been obvious to one of ordinary skill in the art at the time of invention to choose any of least or most significant bits for truncation to meet the design requirements of the system. As to the second limitation, since Easton discloses (see column 17, lines 35-37) that it is desirable to saturate MSBs to prevent overflow of the bits, it would have been obvious to one of ordinary skill in the art at the time of invention to replace a truncated data symbol with the highest value that can be represented by the second number of bits, if the value of the despread data symbol from which that truncated data symbol was obtained is larger than the highest value in order to prevent overflowing of the bits, and replace a truncated data symbol with the lowest value that can be represented by the second number of bits, if the value of the despread data

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symbol from which that truncated data symbol was obtained is less than the lowest value in order to prevent under-flowing of the bits.

As to claims 2 and 11, Applicant in the background of invention discloses that the step of level adjusting the despread data symbols provided from the RAKE unit comprises the step of measuring the level (interpreted as power) of the despread data symbols (see page 3, lines 23-24).

As to claims 4 and 13, Applicant in the background of invention discloses that that level adjusting of the despread data symbols is performed by adjusting a reference value (or factor) of the automatic gain control (see page 3, lines 21-26).

As to claims 5 and 14, Applicant in the background of invention discloses that level adjusting of the despread data symbols is performed by adjusting the level of each despread data symbol individually in dependence of that despread data symbol (see page 3, last paragraph).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure (US 5,696,710) (US 5,633,689) (US 2003/0186665).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEILA MALEK whose telephone number is (571)272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leila Malek
Examiner
Art Unit 2611

/L. M./
/Leila Malek/
Examiner, Art Unit 2611

/Mohammad H Ghayour/
Supervisory Patent Examiner, Art Unit 2611